

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number  
**WO 2005/075340 A1**

(51) International Patent Classification<sup>7</sup>: **B82B 3/00**  
(21) International Application Number:  
PCT/KR2005/000337

(74) Agent: **KOREANA PATENT FIRM**; Dong-Kyong  
Bldg., 824-19 Yoksam-Dong, Kangnam-Gu, Seoul  
135-080 (KR).

(22) International Filing Date: 4 February 2005 (04.02.2005)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
10-2004-0008417 9 February 2004 (09.02.2004) KR

(71) Applicant (for all designated States except US): **KH  
CHEMICALS CO., LTD.** [KR/KR]; 4th Floor, Hanmaeul  
B/D, 191-12 Bangi-Dong, Songpa-Gu, Seoul 138-050  
(KR).

(72) Inventor; and

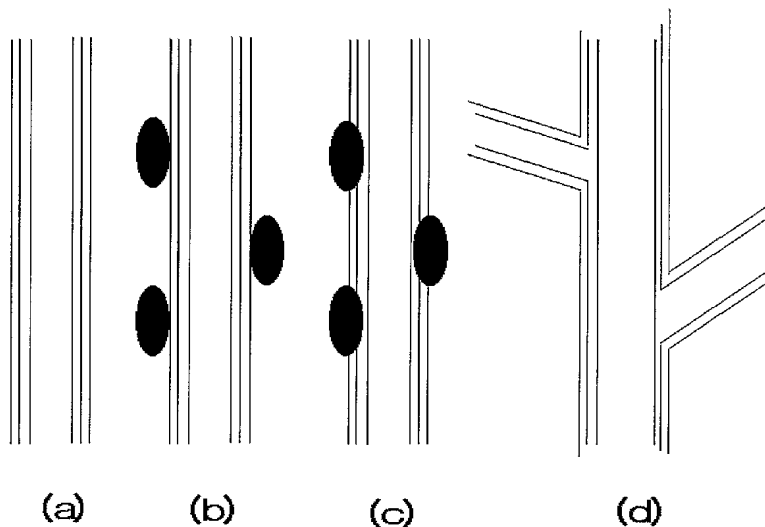
(75) Inventor/Applicant (for US only): **KIM, Young Nam**  
[KR/KR]; Kolong Apt. 101-208, 215 Bangi-Dong,  
Songpa-Gu, Seoul 138-050 (KR).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: A METHOD FOR THE PREPARATION OF Y-BRANCHED CARBON NANOTUBES



(57) Abstract: The present invention provides a process for preparing Y-branched carbon nanotubes and the product thereby, Y-branched carbon nanotubes. More specifically, the present invention provides a process for preparing Y-branched carbon nanotubes, comprising: loading a catalyst on a carbon nanotube carrier; pre-treating the catalyst-loaded carbon nanotubes to have the catalyst bonded tightly to the surface of carbon nanotubes; and performing a synthetic reaction of carbon nanotubes using the obtained catalyst-loaded carbon nanotubes. According to the process of the present invention, Y-branched carbon nanotubes having at least one or more Y-junctions in various shapes can be prepared easily, simply and in bulk by utilizing the conventional facilities under the usual condition of process. Thus, the invention is promising industrially. The Y-branched carbon nanotubes of the invention hold great potential in regard of materials for electrodes, reinforcing agents for polymers, transistors and electrochemical products.

WO 2005/075340 A1



**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*